



**NRL BAA Announcement  
# 71-09-01**

**PHYSICAL/STRUCTURAL/ACOUSTICS**

The Naval Research Laboratory (NRL) is interested in proposals of theoretical and experimental studies of acousto-elastic systems and parameters by means of physical techniques, and of physical systems and parameters by means of acousto-elastic techniques. NRL's experimental programs are mainly carried out in a laboratory setting, typically involving state-of-the-art digital electronic, optical, fiber optic, acoustic, and micro-nano structure fabrication capabilities. A large component of the work is carried out in the three structural acoustic pool and in-air facilities operated by NRL and in its low temperature-micro and nano structures laboratories, two of which are in the NRL Nano-facility. Results are obtained in solids, fluids, composites, microstructures and nanostructures by observing fundamental physical acoustic mechanisms in materials and structures possessing various properties, shapes, and surfaces.

Sub areas of structural acoustics include:

- (1) The development of advanced numerical modeling approaches that deal with complex sound-fluid-structure interaction problems.
- (2) The development of new measurement methodologies and technologies for characterizing sound-fluid-structure interactions.
- (3) Structural acoustic research into the scattering and radiation of sound from underwater and in-air structures and the mechanisms that govern these phenomena.

Sub areas of physical acoustics include:

- (1) Researching advanced measurement techniques for studying phonon mechanisms and elastic vibrations in micro and nano structures.
- (2) Researching the relationships between micro and nano structure, material parameters, and phonon/elastic wave behavior.

Address White Papers (WP) to Code 7130, [e-mail](#), telephone (202) 767-2491. Allow one month before requesting confirmation of receipt of WP, if confirmation is desired. Substantive contact should not take place prior to evaluation of a WP by NRL. If necessary, NRL will initiate substantive contact.